

TASK ORDER

GSQ0014AJ0101

Integrated Award Environment Common Services

in support of:

Integrated Award Environment (Federal Acquisition Service)

Issued to:

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SECTION C –PERFORMANCE-BASED STATEMENT OF WORK

C.1 PURPOSE

The purpose of this procurement is to assist GSA's Federal Acquisition Service (FAS) Office of Integrated Award Environment (IAE) with designing, developing, implementing, and operating a single Common Services platform. This platform will serve as the foundational capability which the future IAE core applications will be developed upon, ensuring integration and supportability of these core applications across the IAE environment. The Common Services platform will provide the future IAE core applications with common services to include hosting, search, database and data store, reports and data visualization, identity and access management (IAM), and application programming interface (API) management. The Common Services contractor shall continue to build common capabilities required in the IAE environment such as common login screens, management of common data, and common reporting.

C.2 ORGANIZATIONAL MISSION

The mission of GSA is to deliver the best value in real estate, acquisition, and technology services to the Government and the American people. By using the purchasing power of the Federal Government, GSA drives down prices, delivers better value, and reduces costs to customer agencies. As a result, these agencies can focus their resources and attention on their core missions. The FAS Mission is making agencies more effective at what they do by providing expertise, management and optimal acquisition solutions.

GSA's Office of IAE, a part of GSA's FAS, is a Presidential E-Government initiative managed by GSA. The Office of IAE supports the stakeholders of the Integrated Award Environment, which include all federal agencies as they execute on their procurements and Federal assistance requirements. The IAE facilitates every phase of the award lifecycle, from market research to contract administration. The Federal Government is working to make the acquisition of goods and services secure, streamlined, and cost-effective with IAE. The goal of the IAE initiative is to integrate and unify common functions and common data of the Federal award process for Government buyers and sellers. IAE technical solutions are co-developed and managed by the FAS and GSA IT organizations on behalf of IAE stakeholders. GSA IT co-leads the IAE effort with FAS by providing quality technology solutions and by being in continuous pursuit of technology in order to be the leader in agility, efficiency, mobility, and productivity.

C.3 BACKGROUND

The following subsections provide guidance on the current state of the IAE environment and the planning processes recently completed by IAE.

C.3.1 IAE PROGRAM

In 2001, the Integrated Acquisition Environment was created as an e-Government (e-Gov) initiative under the President's Management Agenda. As part of the e-Gov initiative, the Office of Management and Budget (OMB) designated General Services Administration as the executive agent of the Integrated Award Environment (IAE). In 2013, the Integrated Acquisition

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Environment was renamed the Integrated Award Environment by its governance to reflect its management of procurement, grants, and federal assistance data.

The concept behind the IAE is to provide Federal Government agencies and contractors with a shared IT system to manage the acquisition and grants making process from solicitation through closeout. The Goals of the IAE Program are to (1) create a simpler, common, integrated Information Technology (IT) service that promotes competition, transparency, and integrity; (2) increase data sharing across the Government and with the public to enable better decisions in procurement, logistics, payment, and performance assessment; and (3) take a unified approach to obtaining modern tools to leverage investment costs across the Federal Government for award-related IT services.

The IAE facilitates all phases of the Federal awards management lifecycle, serves as the entity manager for acquisition and financial assistance (grants and loans) communities, provides market research for contract administration to the Federal acquisition community as well as private and commercial firms that are interested in doing business with the Government, and stores information that the public in general seeks on how tax dollars are being spent. The IAE provides data for Government and non-Government stakeholders including the general public. Below are some general statistics about the IAE systems:

- Contain information on over 700,000 entities doing business or seeking to do business with the Federal Government
- Track more than five million transactions totaling over \$530 billion in annual obligations
- Provide visibility to over \$1 trillion in Government contracts at various stages of performance
- Support over 50,000 monthly customer support inquiries, and provide past performance access for over 22,000 contracting professionals accessing IAE systems each month
- Display over 23,000 Federal business opportunities to millions of users each month

For current and projected demand profiles, see **Section J, Attachment HH**.

IAE is governed by the Award Committee for eGov (ACE) structure which includes the Procurement Committee for eGov (PCE) and the Finance Assistance Committee for e-Gov (FACE). Additionally, all IAE operations are coordinated and prioritized through the Configuration Control Board (CCB) that consists of representatives from each of the 24 Chief Financial Officer (CFO) agencies. These same agencies contribute funding for the IAE operations.

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C.3.2 CURRENT SYSTEMS

The current systems that constitute the IAE were developed over several years as free-standing web-based systems to fulfill different roles throughout the acquisition and grants making process. Many are operated and maintained by various non-GSA organizations (See **Section J, Attachment FF**). Shared functional components of the application stack for these systems are limited to co-location services that cover some systems and a consolidated end-user help desk that supports a different subset of the systems. They consist of the following:

1. System of Award Management (SAM)
2. Federal Procurement Data System – Next Generation (FDPS-NG)
3. USA Spending (in the process of being transferred to Department of Treasury)
4. Federal Business Opportunities (FBO)
5. Electronic Subcontracting Reporting System (eSRS)
6. Federal Funding Accountability and Transparency Act (FFATA) Subaward Reporting System (FSRS)
7. Contractor Performance Assessment Reporting System (CPARS)
8. Federal Awardee Performance and Integrity Information System (FAPIIS)
9. Past Performance Information Retrieval System (PIPPRS)
10. Federal Service Desk (FSD)
11. Wage Determination OnLine (WDOL)
12. Catalog of Federal Domestic Assistance (CFDA)

The Federal acquisitions, grants, and loans that pass through the existing IAE account are comprised of trillions of dollars of Federal expenditures, more than 700,000 registered entities, and approximately 600 opportunities are new per day. Currently, the IAE systems are self contained in silos and are running in differing environments; and as a result, the Government is not efficiently using its resources to share capabilities and data across the twelve IAE systems. Furthermore, the implementation of the IAE systems is inflexible both in its software and infrastructure configuration. It is expensive and time consuming to update IAE functionality and the Government is unable to scale its needs both within and across fiscal years.

C.3.3 ANALYSIS OF TECHNICAL ALTERNATIVES AND ADOPTED APPROACH

In response to program audits, and requests generated through the Office of Management and Budget (OMB) TechStat processes, GSA's Office of IAE initiated an Analysis of Technical Alternatives (ATA). The adopted approach is provided below. The recommended conceptual IAE architecture is depicted in Figure C-1.

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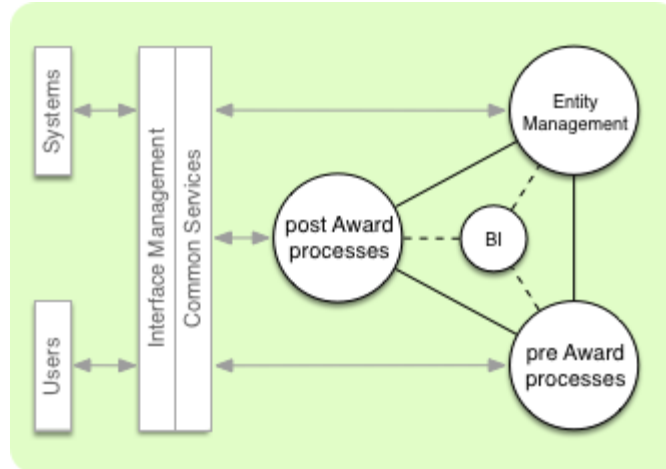
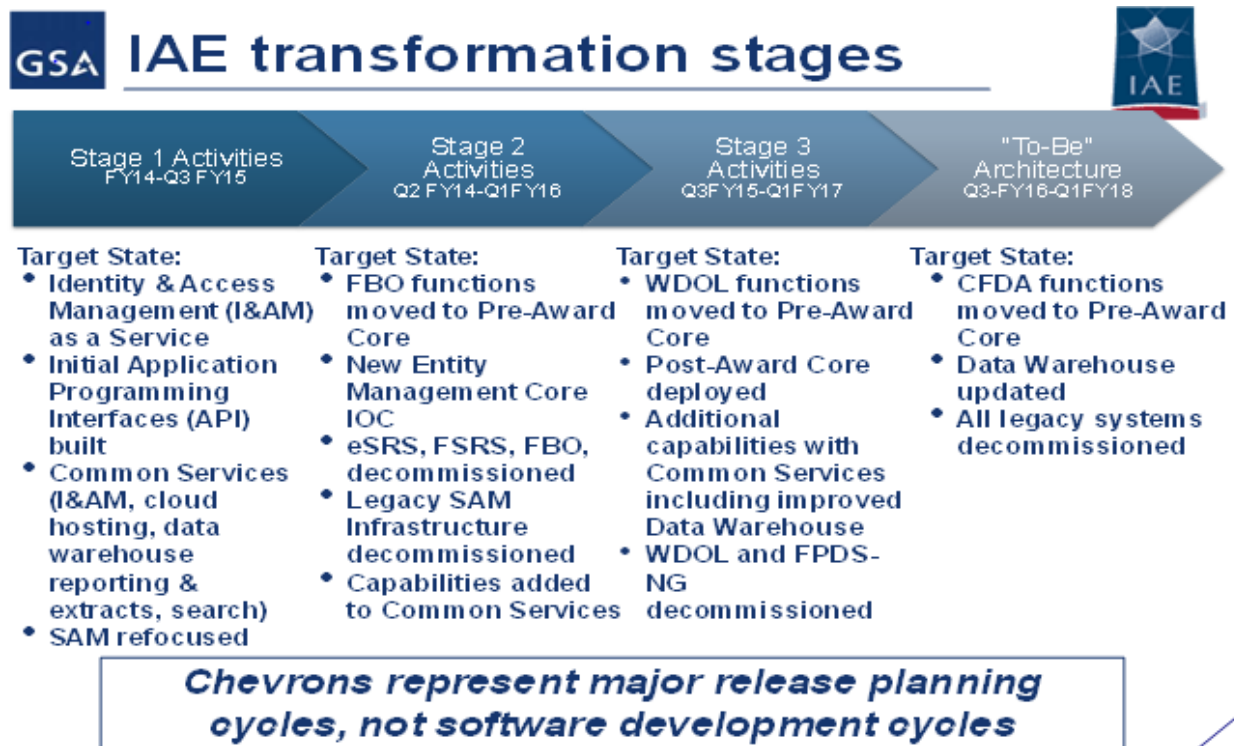


Figure C-1 The 3-Cores with APIs Architectural Model

The adopted approach refocuses SAM as an entity management core, and consolidates the remaining functions performed by the current IAE systems into two cores in-accordance with pre award and post award business processes. APIs will allow alternative 3rd Party User interfaces to be created. Common services will support the entire environment by providing, but not limited to, Identity Access Management, Application Programming Interface Management, Hosting, Datastore, and Reporting services. Common services will establish visualization and customer relationship management layers of business intelligence (BI) on top of a data warehouse. The overall transformation will be handled in three stages with the Common Services Contractor implementing and maintaining Stage 1 below:



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Figure C-2 Transformation Stages

For the Common Services contractor “refocusing” of the IAE systems, beginning with SAM, means implementing the to-be IAE functionality from the current systems into the new IAE platform. The Common Services Contractor shall work in close collaboration with the Core Development Contractor (which is further described in Table C-1 below), that will be responsible for extracting the to-be IAE functionality from each system, see Figure C-2 for a notional view of when functionality might transition to the Platform.

The successful delivery of these common services requires cooperation and coordination between the Common Services contractor and other groups with related or parallel responsibilities. The primary groups that the Common Services contractor must cooperate and coordinate with are listed below and their functions and responsibilities are described in detail in **Section J, Attachment EE**.

- a. Government Operational Oversight and Control Team (functional team)
- b. Government Application Development Oversight and Control Team (technical team)
- c. The Independent Verification (IV)/DevOps Team
- d. Other Development Teams (either contractor or Government teams) contracted to develop applications as part of IAE
- e. External Development Teams not contracted to implement specific functions within IAE (but who nevertheless have a contractual relationship that permits modification to the IAE code base)

Cooperation and coordination with other groups, such as the GSA Security team and the end user help desk, is described in the detailed task descriptions. Figure C-3 below shows these groups and how they interact with the Common Services contractor.

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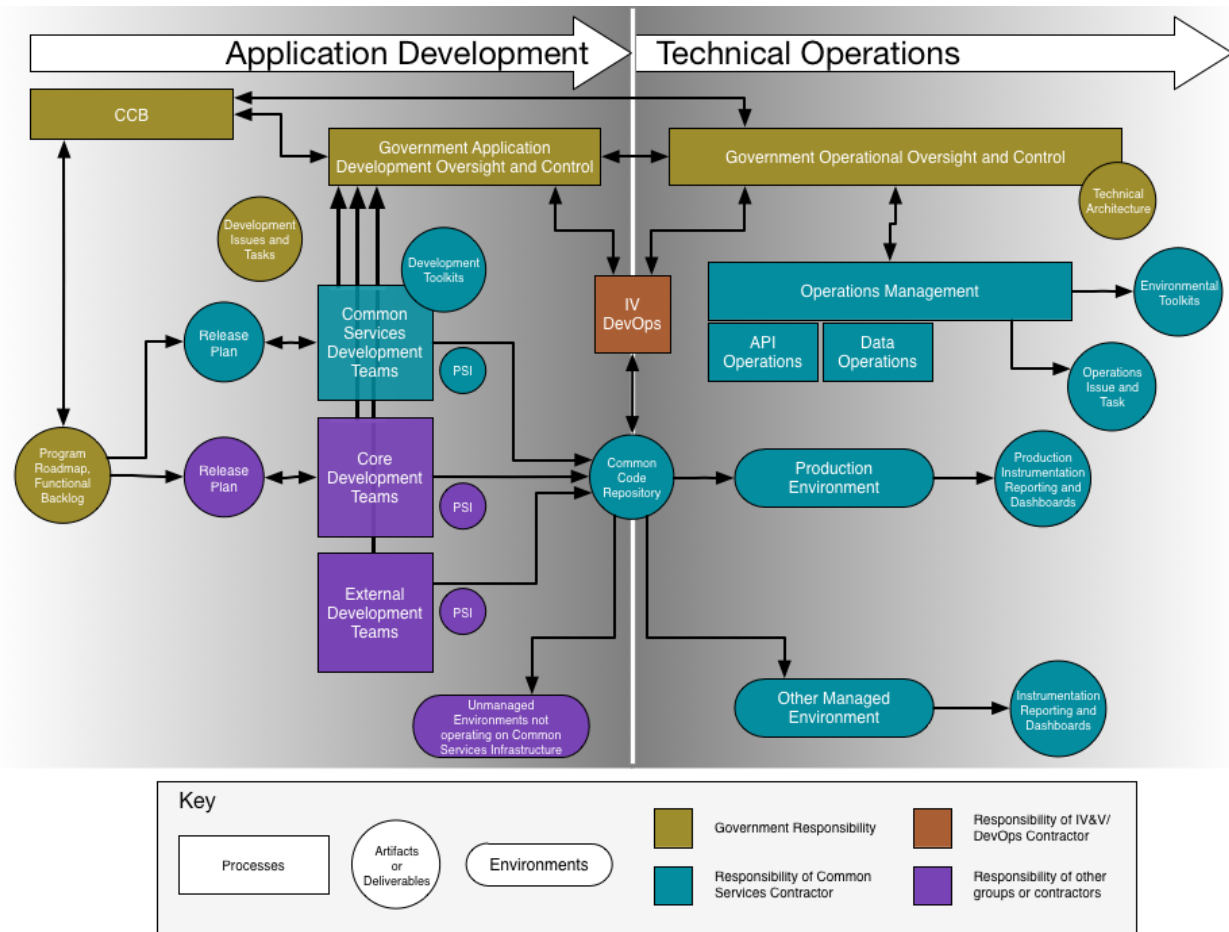


Figure C-3 Activities and Information Flow for Common Services

Refer to the Table C-1 below for a further break -out of the roles and responsibilities of the Activities and Information Flow for Common Services.

Role	Scope (Not Comprehensive)	Responsibility/Deliverables
Common Services Contractor	<p>Providing the framework and tools to support Agile development using DevOps and continuous integration. This includes but is not limited to:</p> <ul style="list-style-type: none"> Tools that support Agile dashboards, burn-down charts, story planning, organization of a “scrum of scrum” environment Package management, automated deployment, configuration management, and deployment tools 	<p>Automated Test Definitions for Common Services</p> <p>System Testing and User Acceptance Testing as assigned to the team via the program backlog. Release Plan for Common Service Infrastructure as Code Stories</p>

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	<ul style="list-style-type: none">Automated testing suites that support functional, performance, system, and other tests are part of the build cycle. These can include test suites that support automated test data generation. <p>Common Services provides the “development supply chain” which all developers will use.</p> <p>Support transition to the common services platform by integration of data (legacy or new) into the data warehouse.</p> <p>Provide access to the infrastructure and support for integration of current systems that are being moved to the common services platform.</p>	
Technical Governance Contractor	<p>Support the Government in oversight of Agile development and continuous integration with DevOps support.</p> <p>Technical governance provides knowledge of best practice and support for oversight as the Government executes its plan to build software.</p> <p>Responsible for the overall IAE UX and design.</p>	Design Standards and supporting documentation.
IV&V/DevOps Contractor	<p>Responsible for foundational test execution and independent verification of the system prior to deployment.</p> <ul style="list-style-type: none">Testing includes first level security testing to verify that code is at a minimally acceptable security level. <p>Will provide assurance that the delivered software can be integrated, work with the Government to define what tests will be required prior to</p>	Test Execution (functional, load, security test) Independent Verification

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	<p>release and execute those tests independently; will promote code from developer branches into Potentially Shippable Increments (PSIs); will evaluate 3rd party code for integration.</p> <p>Will schedule access to the containers for other development teams including common service developers and core developers.</p> <p>Will support DevOps by managing configuration requests from developers using the Common Services provided infrastructure.</p>	
Core Development Contractor/s	<p>Development of the 3-Cores; Pre Award, Entity Management and Post Award.</p> <p>Responsible for the transition and migration of data from the existing application to the new application on the common services platform.</p>	<p>Software Development (Agile Iterations as defined by the Agile process), Automated Test Definitions, System Testing and User Acceptance Testing as assigned to the team via the program backlog</p> <p>Release plans for 3 Core Development Stories</p>

Table C-1 Expectations of Vendor Roles with respect to Agile, Continuous Integration and DevOps Support

- All Development teams including the Common Services Contractor, Core Developers and External Development teams are responsible for release plans in their respective areas. They will provide the Automated Test Definitions as well as releasing their code into the Common Code Repository (as defined in **Section C.6.1.9**) for testing and integration by the Common Services Contractor.
- The Common Services Contractor is responsible for driving the definition of the Agile process, continuous integration and support for IAE's DevOps environment through the tooling that is offered as their solution. The Common Services Contractor is also responsible for the technical requirements definition of the Common Services Platform and the setup of the Common Code Repository.

C.3.3.1 PLATFORM ARCHITECTURAL PRINCIPLES

The IAE program has adopted a number of Architectural Principles that the program uses to guide the products that IAE provides to its user base and the processes through which that product is designed, implemented, and managed. Examples of products include; Single Sign-On

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(SSO) across IAE, APIs to search IAE data, dash boarding and reporting capabilities, instrumentation to manage the API environment (keys, versioning, etc.).

The Principles are:

- a. IAE must be open
- b. IAE must treat data as an asset
- c. IAE must use continuous improvement to drive innovation
- d. IAE must provide an effective user experience for all its stakeholders
- e. IAE business transactions must be time- and cost-measurable
- f. IAE must treat security as foundational

With respect to the Common Services Platform and Common Services Contractor, the Architectural Principles represent constraints on both the acceptable design of the platform and the method in which it is developed and managed. The Common Services Contractor’s solution shall adhere to these principles. Throughout the remainder of this document “architecture” can be defined as a solution architecture that will be provided and operated by the Common Services Contractor. The solution architecture will include a product architecture that describes the solution, from a product perspective, works together internally and demonstrates how the entire solution works together from end-to-end. The Technical Governance vendor will be maintaining the overall architecture. However, the proposed solution by the Common Services Contractor will be integrated into the overall architecture as part of the baseline architecture. The architecture is comprised of the technical architecture and is derived from the architectural models provided later in this document.

The Common Services Contractor shall work with the Government in close collaboration; though the Common Services Contractor may propose Common Services architectures, the Government will own those architectures after they are baselined. The Government will act as active, technical oversight in supporting all the IAE systems. The IAE will manage the architecture to adopt full transparency of openness of all facets in compliance with IAE’s established Transparency Initiative (See **Section J, Attachment GG**).

The Government will oversee and provide technical expertise that controls architectural change to the system. These changes will be managed through the SAFE methodology as Architectural Epics and their underlying stories. As such, the Government IT teams will be guiding the changes to the architecture similarly to any other development activity within the Agile process. The Government also expects that the Common Services Contractor will continually provide architectural improvement recommendations.

C.3.3.2 ARCHITECTURE MODELS

The Common Services environment is defined by a conceptual architecture which, at a high level, introduces the domains for each of the primary components and introduces the containerization concept. The containerization concept refers to a scaled environment where stacks of functionality are deployed as needed. The amount of type of functionality deployed depends on what the container is meant for. For example there could be Minimal Capacity, Near

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Production and Production functionality required. Each container has a different role. For example a Production Container will have more functionality for 24x7 uptime, a higher level of security, backups, and longevity. Near Production container would have production security requirements but would not require 24X7 uptime. The Minimal Capacity Container in this example would have none of those features. The minimal functionality to perform integration testing would be required for this type of container. The Consolidated Deployment diagram graphically depicts the containerization concept and is included in **Section J, Attachment S**. The conceptual architecture contained within **Attachments Q – W of Attachment J** includes:

- a. Domain Models for each of the primary functional components of Common Services (Hosting, API Management, Common Database and Data Store, IAM, Search and Reports & Data Visualization).
- b. A domain dictionary identifying and describing the objects within the domain models.
- c. An overall Consolidated Deployment Diagram.

In addition to these resources an overall Context Diagram is shown below that identifies the services, entries points and likely nodes for the Common Services.

All these models are available as standardized models within GSA’s ProVision modeling application. The models are also available now on <http://interact.gsa.gov>. The graphics of the models are posted on the “IAE Industry Community Group”.

C.3.3.3 CONTEXT DIAGRAM

The foundational architectural components, described in the conceptual architecture, are Containers, Nodes, Services and Entry Points. Each of these concepts is further explained in **Section J, Attachment Y – Foundational Architectural Components**. The Common Services Context Diagram, shown in Figure C-4 below identifies the primary use cases, service entry points, and services within the Common Services environment. The Context Diagram illustrates entry points, services and conceptual nodes. The Context Diagram should be read in conjunction with the requirement statements below.

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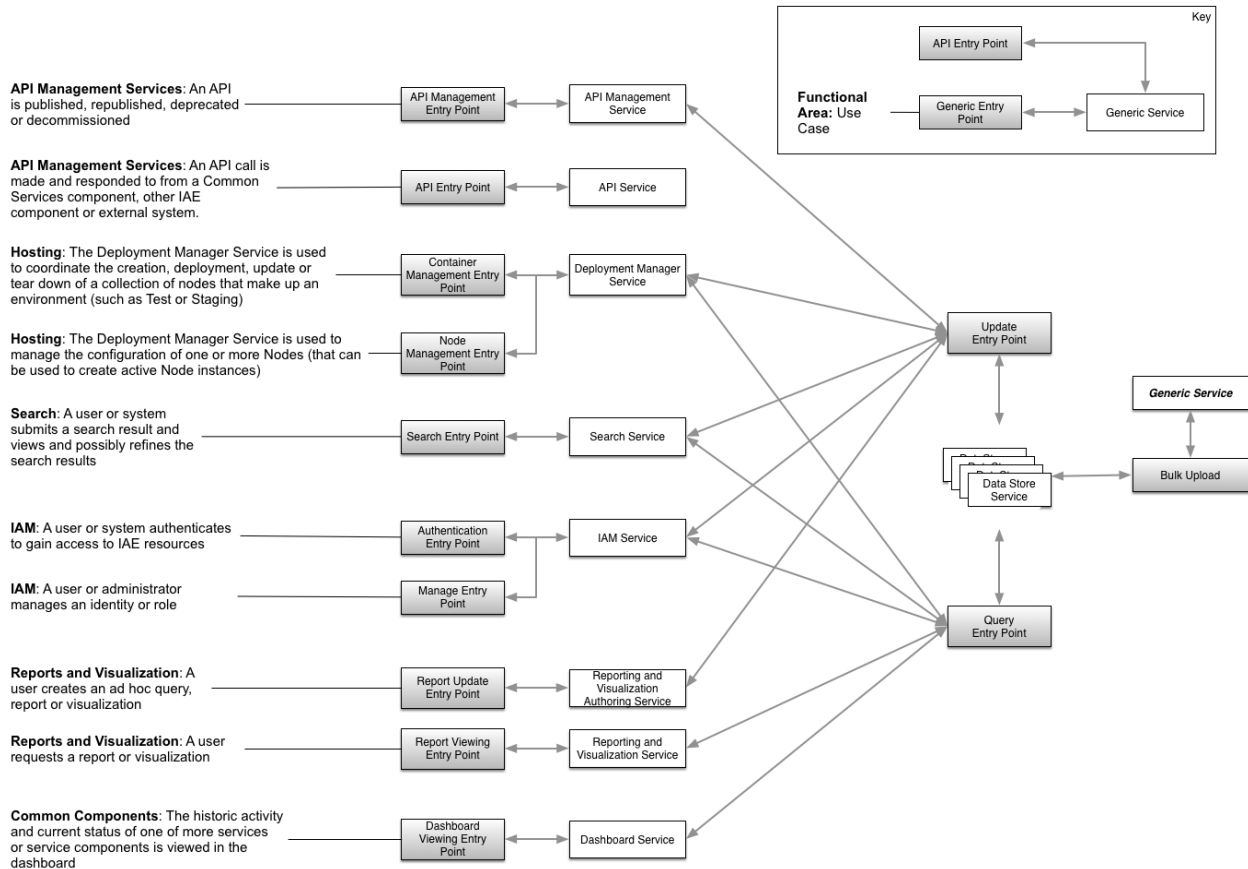


Figure C-4 The Common Services Context Diagram

C.3.3.4 COMMON SERVICES VIEW OF OPERATIONAL ACTIVITIES

The Government expects to be working within a continuous and iterative cadence of development and operations, potentially down to the “node” level. The image below shows a notional cadence of activities, accounting for a subset of operations and development activities happening during a year, quarter, development iteration, and day. This notional cadence can be adjusted to fit program needs and the contractor’s solution.

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A Common Services View of Operational Activities

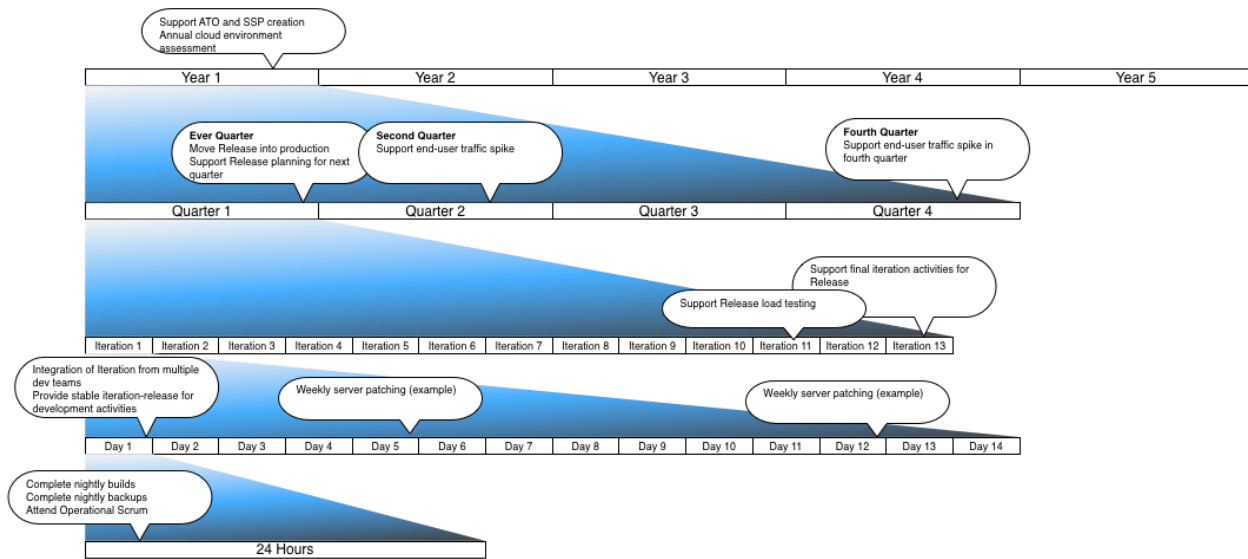


Figure C-5 Notional Cadence of Activities

C.4 OBJECTIVES

The objective of this Task Order is to leverage industry best practices to provide a flexible, powerful set of common services and capabilities that can be reused throughout future IAE applications. The Common Services Contractor shall achieve this by ensuring that the IAE future state is a robust service oriented architecture that includes all facets of the architectural lifecycle, and complies with the following architectural principles:

- The Common Services Platform must be open;
- The Common Services Platform must treat data as an asset;
- The Common Services Platform must use continuous improvement to drive innovation;
- The Common Services Platform must provide an effective user experience for all its stakeholders;
- The Common Services Platform business transactions must be time- and cost-measurable; and
- The Common Services Platform must treat security as foundational.
- The Common Services Contractor shall always ensure that there will be minimum service disruption to vital Government business and no service degradation throughout the period of performance.

The successful offeror shall embrace IAE principles, deliver solutions that reflect Government technology preferences, and utilize agile development practices to ensure continuous delivery of capabilities. The Common Services Contractor-provided platform shall be able to accommodate all IAE capabilities which may include hosting of existing systems as required by the Government. (See **Section J, Attachment FF** for a description of the current systems). The contractor shall provide the platform and all associated capabilities as a service.

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C.5 SCOPE

The scope of this order includes the provision of a technology platform, based on Government-provided design principles that will facilitate the functional sharing of “core” acquisition processes. The Common Services Contractor shall provide common, shareable functions and shall be prepared to insert “core” processes and their corresponding current systems into the platform framework on a continually iterative basis. A list of current systems is provided in this document (**Section C.3.2**).

Development shall be performed using a collaborative Agile process. The Government will be an active participant in this process, and will provide approval for scrum products and acceptance of individual sprint products and overall integrated operational capability. It is envisioned there will be a 60 calendar-day planning phase after contract award, after which the two primary design documents, the Common Services Architecture and the Common Services Platform Detailed Design will be delivered, and then updated after each release cycle (currently envisioned every quarter) as part of the overall Agile development process, provided In Accordance With (IAW) **Section F**.

Performance will be measured based on Service Level Agreements (SLAs/ performance metrics using an Award Fee process, see Section J, Attachment G for the Award Fee Plan. Excellence will be measured at all phases of the Agile process and during the operations and maintenance phase.

Tasks are as follows, and will be further defined below:

Task 1: Project Management Support

Task 2: Transition-in Support

Task 3: Transition-out Support

Task 4: Establish and Implement a Common Services Platform

Task 5: Development and Operation Support

Task 6: Optional Surge Support

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C.6 TASKS

C.6.1 TASK 1: PROJECT MANAGEMENT SUPPORT

The Common Services Contractor shall provide program management support under this TO. This includes the management and oversight of all activities performed by contractor personnel, including subcontractors, to satisfy the requirements identified in this Performance Based Statement of Work (PBSOW). The Common Services Contractor shall identify a Program Manager (PM) by name, who shall provide management, direction, administration, quality control, and leadership of the execution of this TO. The Common Services Contractor shall schedule meetings and provide deliverables IAW **Section F**. The contractor shall provide updates to the Data Rights Continuity Plan (provided initially with the offeror's proposal IAW Section L.8.7) as items are produced or added to the Common Services Platform during the life of the Task Order (See **Sections H.25.5, H.26, and H.27** regarding data rights clauses).

C.6.1.1 COORDINATE A PROJECT KICK-OFF MEETING

The Common Services Contractor shall schedule, coordinate, and host a Project Kick-Off Meeting (IAW **Section F**) at the location approved by the Government. The meeting will provide an introduction between the Common Services Contractor personnel and Government personnel who will be involved with the TO. The meeting will provide the opportunity to discuss technical, management, and security issues, and travel authorization and reporting procedures. At a minimum, the attendees shall include vital contractor personnel, representatives from the IAE directorates, other relevant Government personnel, the Technical Point of Contact (TPOC), and the FEDSIM COR. The Common Services Contractor shall provide the following at the Kick-Off meeting:

- a. Transition-In Plan
- b. Project Management Plan
- c. Quality Control Plan (QCP)
- d. Earned Value Management (EVM) Plan (IAW **Section F**)

C.6.1.2 PREPARE A MONTHLY STATUS REPORT (MSR)

The Common Services Contractor shall develop and provide an MSR (**Section J, Attachment B**) (IAW **Section F**), using Microsoft (MS) Office Suite applications, by the tenth of each month via electronic mail to the Technical Point of Contact (TPOC) and the FEDSIM COR. The MSR shall include the following:

- a. Activities during reporting period, by task (include: on-going activities, new activities, activities completed; progress to date on all above mentioned activities). Start each section with a brief description of the task.
- b. Problems and corrective actions taken. Also include issues or concerns and proposed resolutions to address them.
- c. Personnel gains, losses, and status (security clearance, etc.).

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- d. Government actions required.
- e. Schedule (show major tasks, milestones, and deliverables; planned and actual start and completion dates for each).
- f. Summary of trips taken, conferences attended, etc. (attach Trip Reports to the MSR for the reporting period).
- g. EVM statistics.
- h. Accumulated invoiced cost for each CLIN up to the previous month.
- i. Projected cost of each CLIN for the current month.

C.6.1.3 EARNED VALUE MANAGEMENT (EVM)

The Common Services Contractor shall employ and report on EVM in the management of this TO. See **Section H.19**, Earned Value Management, for the EVM requirements.

C.6.1.4 CONVENE TECHNICAL STATUS MEETINGS

The Common Services Contractor PM shall convene a monthly Technical Status Meeting (IAW **Section F**), with the TPOC, FEDSIM COR, and other vital Government stakeholders. The purpose of this meeting is to ensure all stakeholders are informed of the monthly activities and MSR, provide opportunities to identify other activities and establish priorities, and coordinate resolution of identified problems or opportunities. The Common Services Contractor PM shall provide Technical Status Meeting Minutes (IAW **Section F**), of these meetings, including attendance, issues discussed, decisions made, and action items assigned, to the FEDSIM COR within five workdays following the meeting.

C.6.1.5 PREPARE A PROJECT MANAGEMENT PLAN (PMP)

The Common Services Contractor shall document all support requirements in a PMP (IAW **Section F**). The PMP shall:

- a. Describe the proposed management approach of its agile-based solution.
- b. Contain detailed Standard Operating Procedures (SOPs) for all tasks.
- c. Include Master Schedule to include milestones, tasks, and subtasks required in this TO.
- d. Provide for an overall Work Breakdown Structure (WBS) and associated responsibilities and partnerships between or among Government organizations.
- e. Include the QCP and EVM Plan.

The Common Services Contractor shall provide the Government with the PMP, on which the Government will make comments. The final PMP shall incorporate the Government's comments.

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C.6.1.6 UPDATE THE PROJECT MANAGEMENT PLAN (PMP)

The PMP is an evolutionary document that shall be updated annually at a minimum. The Common Services Contractor shall work from the latest Government-approved version of the PMP.

C.6.1.7 PREPARE TRIP REPORTS

The Government will identify the need for a Trip Report when the request for travel is submitted. The contractor shall keep a summary of all long-distance travel including, but not limited to, the name of the employee, location of travel, duration of trip, and point of contact (POC) at travel location. The contractor shall provide Trip Reports (IAW **Section F**). They are due 5 work days after completion of trip.

C.6.1.8 UPDATE QUALITY CONTROL PLAN (QCP)

The Common Services contractor shall provide a QCP (IAW **Section F**) at the Project Kick-Off Meeting. The Common Services contractor shall periodically update the QCP as changes in program processes are identified and provisions made for responding to and incorporating technical directions and comments from the FEDSIM COR and TPOC.

C.6.1.9 COMMON SERVICES CODE REPOSITORY

The Common Services Code Repository (See **Section F.5**) is the means by which the Common Services Contractor will store and manage the versions and configuration of the Source Code, including the Infrastructure as Code definitions, documentation, build scripts, and any other artifacts required to build the IAE Common Services Platform. The repository includes all the artifacts associated with all containers such as development, test, UAT, beta and their entire version history including any version branches that have been created throughout development. Any Object Code (such as linked libraries) that is not buildable from the Source Code will be contained in the Code Repository. (Note that this does not preclude the Government from obtaining all Object Code, as required.)

The Common Services Contractor will deliver all artifacts in such a way that the Government is able to build, configure and operate, in its entirety, the Common Services environment with all branches of the Code Repository at any time. The Government shall have access to all tools that implement the Common Services Platform. The Government shall own and have full, administrative access, to the entire IAE dataset at any time IAW **Sections H25.5, H.26, and H.27**. The Government shall own the rights to the contents of the entire Code Repository which is comprised of; production and other code branches including all delivered products, the configuration of the products, data components of the products, and the code produced by the Common Services Contractor including; functional deliverables, test automation and documentation deliverables, and interface deliverables. The term “Code Repository”, as defined above, will be used throughout the remainder of this document.

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The Common Services Contractor shall provide the Code Repository, including the most recent Source Code and Object Code developed under the efforts of this Task Order to the Common Services Platform and any data, configurations or documentation to the Government IAW the delivery requirements in **Section F.5**. The Government's requirements for data rights in the Code Repository are specified in **Sections H.25.5, H.26, H.27** and FAR clause at 52.227-17. If the Common Services Contractor modifies any COTS or Open Source code, the Common Services Contractor shall ensure that all COTS licenses and Open Source licenses allow for those modifications and vest the data rights to the modifications exclusively in the Government, as well as ensure those modifications are contained within the Code Repository. GSA shall have unlimited rights to use and modify all Code Repository versions (as applicable), and its associated documentation, even in the event that the Common Services Contractor should become unable to continue supporting the Common Services Platform, and the Common Services Contractor, immediately upon delivery (each deliverable accompanied by a signed assignment of copyright), shall assign copyright in such Code Repository to the Government as contemplated under the FAR clause at 52.227-17, Rights in Data – Special Works (Jun 1987). The Code Repository and associated data, configurations and documentation, for releases of the software produced under this Task Order shall become the property of the Government upon termination of the Task Order. The Code Repository (as applicable), with its associated documentation and other materials as specified in **Section F.5**, shall be delivered to GSA on dates established in accordance with **Section F.5**, but in any event no later than 30 calendar days following the termination/ expiration of the Task Order. In the event the Common Services Contractor defaults on the terms of this Task Order for any reason, the most current version of the Code Repository shall be delivered to GSA no later than 30 calendar days following the event that leads to the termination/expiration of the Task Order and the Government will retain the right to use any and all versions of the Source Code and Object Code contained within the Code Repository, and to further develop and distribute it, with no further royalties or other payments being due to the contractor or any other party.

C.6.2 TASK 2: TRANSITION-IN SUPPORT

All transition activities will be completed 60 calendar days after the start date of the Task Order. The Common Services Contractor shall propose a Transition-In Plan (IAW **Section F**) at the Kick Off Meeting. The Common Services contractor shall implement its Transition-In Plan after Government acceptance of the plan.

C.6.3 TASK 3: TRANSITION-OUT SUPPORT

The Transition-Out Plan shall facilitate the accomplishment of a seamless transition from the incumbent to an incoming contractor/Government personnel at the expiration of the TO to include the transfer of all Data Rights, IAW **Sections H.25.5, H.26, and H.27**. The Common Services Contractor shall provide a Transition-Out Plan (IAW **Section F**) NLT 90 calendar days prior to expiration of the base period of the TO. The plan shall identify how the Common Services Contractor will coordinate with the incoming contractor and/or Government personnel to take ownership per **Sections H.25.5, H.26, and H.27**, of the Common Services Platform and all associated deliverables (See **Section F**) and transfer knowledge regarding the following:

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- a. Project management processes
- b. Points of contact
- c. Location of technical and project management documentation
- d. Status of ongoing technical initiatives
- e. Appropriate contractor-to-contractor coordination and training to ensure a seamless transition.
- f. Transition of Key Personnel
- g. Transition of data and assets
- h. Schedules and milestones
- i. Actions required of the Government.

The Common Services contractor shall implement the Transition-Out Plan upon Government acceptance of the plan.

The Common Services Contractor shall also establish and maintain effective communication with the incoming contractor/Government personnel for the period of the transition via weekly status meetings.

C.6.4 TASK 4: ESTABLISH AND IMPLEMENT A COMMON SERVICES PLATFORM

To establish the Common Services Platform, the Common Services Contractor shall provide the Common Service Platform Architecture (Draft, Final and Updates IAW **Section F**) as the basis for implementation as part of the solicitation proposal. The architecture shall describe the solution which shall consist of the solution architecture and its defined component product architecture. The solution architecture will define the products, configuration, roles, processes and capabilities that are aligned to the goals and objectives of the IAE program in the context of the platform whose requirements are defined below. The component product architectures will define the specific architecture and configuration of individual products in the context of the solution architecture that will lead to the implementation of the platform.

In accordance with the architectural principle 'Security is Foundational', the Common Services Contractor shall provide a comprehensive approach to the integrity of the platform that encompasses architecture and design best practices, enhanced operational monitoring, and processes customized to manage the risks apparent in the overall IAE program. The Common Services Contractor shall develop an Application Risk Assessment and Mitigation Plan (IAW **Section F**) and produce the elements of the mitigation strategies agreed to by the Government. Examples of elements of the Application Risk Assessment and Mitigation Plan include procedures to ensure appropriate review prior to release of application code, test data and documents; guidance to development teams on the appropriate use of cloud capabilities to create secure and reliable solutions; and minimum testing requirements for automation of security related testing.

The Common Services Contractor shall provide the required products and services to implement an Internet-based Common Services Platform. This includes a technical infrastructure/software platform and at a minimum the following shared services: common components, hosting, search, database and data store, reports and data visualization, identity access management (IAM), and

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application programming interface (API) management. All of these service components shall be easily useable and shareable between all IAE systems and to other organizations. The Common Services Platform Architecture, in both its solution architecture and component product architectures, will describe the method of provision of those shared services. The Common Service Contractor shall also develop operational and performance SLAs (IAW **Section F**) to include Performance Objectives baselines, KPIs, and Performance Metrics for the common services by which the Government will measure performance in Tasks 4 and 5.

The Government shall have full access to the Code Repository IAW Sections **H.25, H.26, and H.27**.

The Common Services Contractor-recommended and -provided platform shall be capable of hosting and fully supporting all IAE systems listed in **Attachment FF in Section J** (as of the date of this solicitation). The Common Services Platform shall support common processes that include, but are not limited to: user management, Federal hierarchy management, searches across all IAE data, and cross-process reporting. Federal Hierarchy Management refers to the process of creating, updating, and removing various agencies and departments for U.S. Federal Government entities. The resulting Common Services Platform shall meet or exceed the required performance metrics as identified in **Section J, Attachment II**. The Common Services Contractor shall update and refine the Common Services Platform Architecture (IAW **Section F**) to include the solution architecture, defined component product architecture, and methods by which changes to the solution will be captured in updates to the Architecture within the infrastructure as code concept defined in **Section C.6.4.2** as the platform evolves throughout its lifecycle.

C.6.4.1 SUBTASK 1: COMMON SERVICES PLATFORM RECOMMENDATION

The Common Services Contractor shall recommend a solution by providing a Common Services Platform Architecture (Draft, Final and Updates IAW **Section F**) which includes all infrastructure, operating software, and tools to support the Common Services. The recommended solution shall be based on the Common Services Contractor's solicitation proposal and shall allow the Common Services Platform to be capable of supporting the systems included in **Attachment FF of Section J**, and be scalable to easily accommodate future system components and core processes.

The Common Services Platform Architecture shall be provided IAW the high-level conceptual architectural principles contained in the Adopted Approach described above and the Government-provided Technical Governance and Architecture standards that will be provided to the contractor during the planning phase. The planning phase consists of a 60-day period beginning at Project Start during Transition-in. The Common Services Contractor shall produce as part of the Common Services Platform Architecture; a draft Component Product List, draft Solution Architecture, including methodology of capture and change to the architecture and culminating with a complete Common Services Platform Architecture. The complete architecture will include Infrastructure as Code and the methodology of implementation as the main deliverable at the end of the 60 day planning period. The recommended solution shall comply with the following design requirements for the Common Services Platform:

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- a. Readily accessible using cloud-oriented service provision.
- b. Maximize the use of Commercial-Off-The-Shelf (COTS) and Open Source Software (OSS) tools. The Common Services Contractor may propose a single suite of tools that meets all the requirements, or a set of tools that can be integrated to meet the requirements. The Government may specify other tools in coordination with the vendor to fulfill IAE requirements. In cases where the Common Services Contractor wishes to propose tools, the proposal should provide justification as to the value of such a selection and how it will fit with the existing architecture. Any Infrastructure as Service (IaaS) or Platform as Service (PaaS) implementation may require the use of COTS tools in addition to what is provided through the service. For all COTS Tools provided by the Common Services Contractor, the Common Services Contractor shall provide product licenses which will convey to the Government as Contractor Furnished Property. The Government expects that any Software as Service solution (SaaS) would not require any additional licensed software or COTS solution. The Common Services Contractor shall balance the use of customized code while still supporting the open philosophy of IAE.
- c. Support the IAE's transparency initiative; this includes the use of open source tools as well as the development of open source code, including architecture definitions; employment of open standards; and transparency about IAE's operation.
- d. Provide a platform that is scalable and that facilitates standing up services and applications quickly as additional applications and capabilities are required by the Government.
- e. Provide the platform products in a manner that the products' incremental costs are managed reasonably in a clear, well-understood manner.
- f. Allow the Government to provide tool information to the public as part of its transparency initiative, where such release would not violate intellectual property or security considerations.
- g. Allow the Government the ability to easily transition the back-end providers for purposes of continuity of service, cost efficiency, or other rationale
- h. Provide at a minimum, daily backups to the IAE data that are always accessible to the Government.
- i. Allow the IAE program to use these products in conjunction with other programs, such as the Common Acquisition Platform; the IAE program will manage cost recovery using information provided by the Common Services Contractor.
- j. Incorporate the premises of user centric design, Agile development, data transparency, open source, open APIs, strong testing regime, strict security protocols, and managed code handoffs.
- k. Perform and produce services and deliverables that align to the business needs of GSA and its customers.
- l. Maximize the use of GSA best-practice frameworks such as CMMI, ITIL®, and Agile to deliver improved IT services.
- m. Minimize developmental and operational costs of service delivery and optimize the use of available funds and avoid unnecessary expenditures.
- n. Support an API-first design for the entire IAE capability, including change management of the APIs as new business requirements are imposed; IAE integrates with many systems which requires a sophisticated view of API and data change management that goes beyond simply maintaining multiple versions of file formats.

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- o. Provide a presentation layer that allows IAE to execute on its user-centric approach to design, including responsive design to support mobile devices.

C.6.4.2 SUBTASK 2: DEVELOP AND IMPLEMENT THE COMMON SERVICES PLATFORM

Upon approval of its Common Services Platform Architecture, the Common Services Contractor shall develop and implement an infrastructure and software platform to include all necessary tools and storage capability that results in fully operational Common Services Platform Capability. The Common Services Platform shall include all products and services required to implement the recommended solution, including, but not limited to, servers, storage devices, and tools in an “Infrastructure as Code” concept – that is, infrastructure defined and deployed through open scripting.

The Government anticipates the need for a hybrid cloud solution to ease transition efforts. The first implementations of the Common Services Platform shall be focused on establishing Initial Operating Capability (IOC). The Government anticipates that the first two quarterly releases will be dedicated to IOC with future sprints integrating more features according to and prioritized by the program backlog. The Government defines IOC as minimally functional implementations of the following:

- Hosting
- IAM
- Datastore
- Search
- API Management
- Common Components

The last item on the list above, Common Components, refers to selection and implementation of the tools/services required to support Agile, Continuous Integration and DevOps as well other tools and services mentioned below, such as email and business rules engines. IOC goes beyond technical implementation of these capabilities; IOC includes sufficient documentation that would allow other vendors in IAE to appropriately integrate with the Common Services. The Common Service Contractor shall provide any necessary documentation and/or assistance to other functional teams with respect to integrating and working in the environment.

Additional details of IOC will be determined during the 60 day planning phase of the task order as the architecture is further defined. During the planning phase, the list of potential deliverables to be included in the Common Services Platform Architecture deliverable (IAW **Section F**) are as follows:

- Baseline Architecture
- Solution Architecture
- Architecture Management Plan
- Defined Product Component Architecture
- Infrastructure as Code concept

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Along with the delivery of the Baseline Architecture additional details of the solution will be defined during the 60 day planning phase. For example, a common component will be notifications such as email or push notifications. It will not be known when this functionality will need to be operational until further in the architecture defining process.

The Common Services Contractor shall include in its solution the ability to easily transition the back-end providers. (This shall be provided by the use of tool(s) such as Eucalyptus, Puppet, or Chef, or other tools which can be configured to ease of transition between back-ends.) The Common Services platform shall be developed IAW with requirements of the Application Development section below. An example of a transition would be that an incumbent contractor may be required to transition existing data and infrastructure to the Common Service platform. The Common Services Contractor would be required to provide access to the platform and the corresponding sizing and bandwidth to accommodate the transition; however, the Common Services Contractor would not be required to write any of the code related to the transition, the incumbent contractor would be responsible for the application and coding. As stated above, however, the Common Services Contractor will provide support for the incumbent vendors in the use of the Common Services platform to support the success of IAE in its overall goals.

Additionally, for external users of IAE, the Common Services Contractor shall include in its solution the provision of Tier 2 help desk support. This support includes Resolve Tier 2 technical help desk calls as escalated from the Federal Services Desk and reporting back the issue resolution to the Federal Service Desk tracking system. Help Desk Tier 1 support will be provided by a separate contract. All Help Desk calls will initially go to the Tier 1 help desk, the Federal Service Desk (FSD). If the problem cannot be resolved by Tier 1 because more expertise is required for resolution, then the problem, if determined appropriate for the Common Services Contractor, will be routed to Tier 2.

During the 60 day planning phase at the beginning of the task order, the Common Services Contractor will determine through Government-verifiable means, appropriate usage models for other parties to use services within IAE. Examples of potential models would be a time-based model or flat-fees. However, the key requirement is that the IAE program can clearly delineate between costs incurred by the IAE program itself and those that are external to the program. At no point can the IAE program fund any external activity or usage. This requirement does not have to be implemented immediately depending upon priorities but must be accounted for during the planning phase.

APPLICATION DEVELOPMENT

In supporting Common Services Application Development the Common Services Contractor shall interface with various governance/development teams as described in **Section J, Attachment EE**. The Government will provide technical oversight for system integration in the new architecture. Specifically, the Government will use the Agile process to define, approve, and prioritize changes to the architecture. The Common Services Contractor shall execute the integration tasking as approved by the Government. The SAFe Framework - or an equivalent that supports enterprise management of multiple Agile teams working simultaneously - shall be

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utilized where Business Epics and Architectural epics are decomposed as part of the program backlog that is produced by Product Owners. As one of the functional teams, the Common Service Contractor will be given team story backlogs to execute for implementation of the solution architecture. The Common Service Contractor engages with the other functional teams by utilizing Test Driven Development (TDD) and writing Infrastructure as Code and deploying that code as part of the Continuous Integration environment. The Code Repository (defined in detail in **Section C.6.1.9**) will contain all current and historical branches of the code developed by the Common Services Contractor. This code includes (but is not limited to) any source code, configurations, Infrastructure-as-Code scripts, documentation, and other artifacts required to develop, build, and deploy the IAE capabilities. The Code Repository tools used in the development and test environments provided by the contractor will be available for use by other users at Government request; the public code repository will be on GitHub.

Using the Scaled Agile Framework (SAFe) terminology, Potentially Shippable Increment (PSI) is defined as any collection of capabilities that are releasable to the public as usable functionality. Not every PSI may be released, but every PSI is releasable. The public GitHub repository will contain any code that the Government determines is a PSI through the development process.

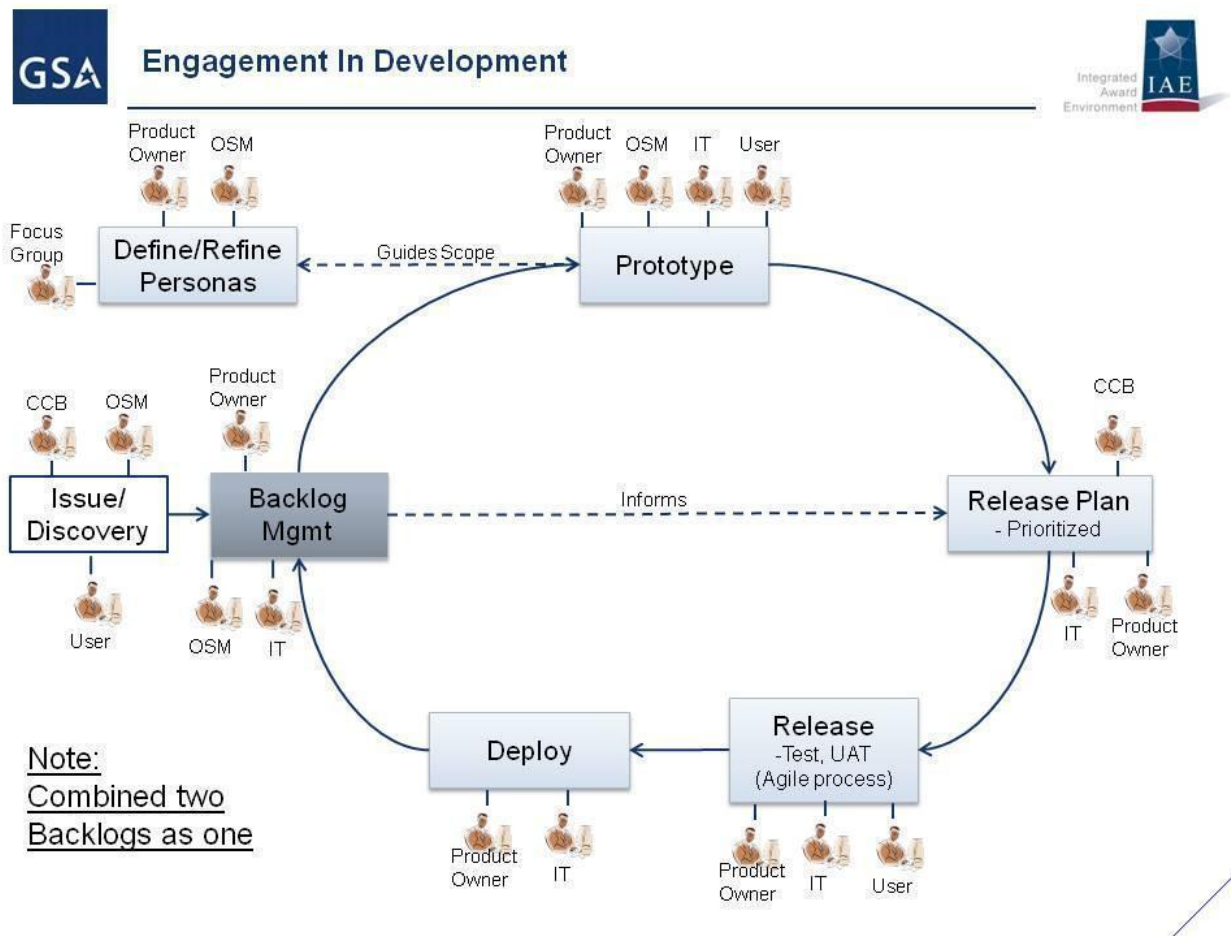


FIG C-6 The Engagement in Development Chart: *This chart displays a notional example of Task Order GSQ0014AJ0101 Mod 8*

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how IAE envisions applying Agile to engage users and stakeholders for development, specifically with: (1) IAE's Change Control Board (CCB) (which consists of representatives from the 24 CFO Act agencies that use IAE services) and (2) with other users and stakeholders via IAE's Outreach and Stakeholder Management Division (OSM) and (3) "IT" in the chart represents IT technical teams. UAT refers to User Acceptance Testing.

The contractor shall use a GFP solution for specific infrastructure components or as the basis for a complete solution. As an example, the Government intends to use GitHub for its public repository. The Government reserves the right to modify the GFP in coordination with the contractor either during the planning phase at the beginning of the task order, when the tools selection is to occur, or after initial deployment as the application matures. This may include, for example, replacing a Common Services Contractor-provided solution with a Government-directed one. The Common Services Contractor can propose alternative solutions for consideration by the Government, but the Common Services Contractor shall implement in accordance with the Government's decision. For the Common Services Contractor application development teams, the Government anticipates quarterly releases (four per year) with development iterations delivering stable increments every 1-3 weeks, the most likely iteration length being 2 weeks. The Common Services Contractor shall comply with the following developmental and implementation requirements:

- a. The IAE development process shall follow an Agile at Scale framework that is currently being customized to support the GSA and IAE environments. Following the SAFe model with iterations and Potentially Shippable Increments (PSIs) scheduled in line with the program wide release cadence, each Development group shall operate as a "Team" and include Product Owner (Government), Architecture Lead (OCIO, Government), Scrum Master and as needed developers, DBAs, technical writers, testers and other technical specialists.
- b. The solution shall include a continuous integration environment through the development and delivery to the IV&V and DevOps team of configuration scripts, tests (functional, integration, load etc.) and other artifacts to support fully automated deployment and maintenance.
- c. The Common Services Contractor shall support Release-level activities including user acceptance through Agile development, that is, activities to support Government acceptance of the product.
- d. The Common Services Contractor shall evaluate development performance and provide process improvement recommendations, as well as implement Government approved process improvement recommendations and monitor impact on development activity.
- e. The Common Services Contractor shall develop code in compliance with IAE's open source requirements. This includes releasing code through the IAE IV&V/DevOps to a public Code Repository (as defined in **Section C.6.1.9**) as each potentially shippable increment (PSI) is completed through an Agile iteration.
- f. The Common Services Contractor shall follow the GSA Digital Analytics Program standards which use the Google Analytics tool for usage analytics. The details of the Digital Analytics Program will be provided after award.
- g. The Common Services Contractor shall conform to the overall architecture, and provide applications that fit within the overall IAE architecture. The Government will govern the

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change of the architecture as Architectural Epics and their underlying stories and features through the Agile process.

- h. The Common Services Contractor shall support migration of current IAE systems onto the common services platform including the data warehouse and access to the common services platform.
- i. As the operations are measured, the Common Services Contractor shall propose changes to the architecture which will improve IAE operations as part of IAE's goal of continuous improvement.
- j. The Common Services Contractor shall follow the program-wide instrumentation standards to enable (1) real-time monitoring by the Operations team to support availability (2) access to application behavior information for the Development team (3) usage-based cost recovery.
- k. The Common Services contractor shall recommend the Common Services Architecture to include a solution architecture and throughout the contractual period the Common Services Contractor shall work with the Government to evolve those standards to IAE requirements.
- l. The Common Services Contractor shall conform to the standards and protocols for building and configuring applications. The contractor shall manage configuration standards which conform to the program standards.
- m. The Common Services Contractor shall participate in inter-development team coordination through scrum of scrums or similar mechanism.
- n. The Common Services Contractor shall use Agile development methodologies implemented in a manner similar to the SAFe (Agile at scale) framework and supported by a Continuous Integration deployment team.
- o. Within the development teams, the Common Services Contractor shall execute all activities required to create a production ready code base that will be completed including User Acceptance Testing (UAT). There may be a separate Release level UAT, although the extent of this work is uncertain. This schedule may change over time, appropriate to program needs.
- p. The Common Services Contractor shall provide tooling to support automated generation of test data that developers and UAT teams will use to generate test data sets.
- q. The Common Services Contractor shall coordinate with the Government to support DevOps/IV&V.
- r. The Common Services Contractor shall ensure UAT, Help Desk documentation, User Manuals, and other materials are provided to the Government in accordance with the deliverables identified in **Section H**. These deliverables have delivery timelines which include ample time for the Government to receive, review, and approve them within the anticipated 2-week iteration cycle.
- s. The Common Service Contractor shall provide a system that ensures that other groups, including public groups not directly associated with IAE, are able to easily create a complete working IAE environment including a full infrastructure and application stack, directly from the Common Code Repository with test data scrubbed according to IAE security policy. (For these external environments, neither the IAE program nor any of the supporting contractors would be responsible for managing the environments or for providing infrastructure on which they are deployed.)
- t. The Common Services Contractor shall develop a full representation of the architecture (excepting those items which would impact security or other sensitive concerns) that is

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representable to the public. That representation should be usable to execute the generation of components of the infrastructure environment.

- u. The Common Services Contractor shall produce Potentially Shippable Increments (IAW **Section F**) at the end of each Sprint Iteration, through code creation activities, tool configuration, test case creation, testing, user acceptance testing, preparation of end user documentation, material to support end-user help desk (Carrier Sensitive Routing) (CSRs) and other required activities.
- v. The Common Services Contractor shall submit PSIs to the Government to be reviewed independently for quality assurance; those PSIs may be posted as part of an "unstable" or "experimental" branch of the IAE public code base at the discretion of the Government with the production releases being released as final builds also available to the public.
- w. The Common Services Contractor shall execute development activities for Common Services that shall operate in concert with development activities performed by Government and other development teams.
- x. The Common Services Contractor shall integrate release planning and requirement refinement with a unified, program-wide and Product Backlog management process organized and defined by the Government. The Common Services Contractor shall provide a complete explanation of reference scale natural framework.com (modified Safe or equivalent).
- y. Working with the Product Owner, the Common Services Contractor shall support an in-team Agile development process including Sprint (iteration) Planning and all activities within the development team. The Government does not require a particular internal development team organization. The Common Services Contractor should propose and identify which standard or customized team organization is appropriate (for example Scrum or Kanban methods)
- z. Based upon the overall Release Plan, the Common Services Contractor shall conduct sprint planning to ensure that the objective of balancing new functionality, bug fixes, and refactoring; and to ensure the long term health of the code base.
- aa. The Common Services Contractor shall provide appropriate transition support to the service desk; to include, training, support documentation, known errors and workarounds, and additional transition personnel support as required
- bb. The Common Services Contractor shall configure and manage an issue tracker capability for the common services using the GFE JIRA tool or other Government provided tools.
- cc. The Common Services Contractor shall maintain progressively refined Common Services Architecture and Common Services Platform Detailed Design that can be provided to the Government, IAE developers, and to the open source community. Note that the architecture released to the public may remove information which may compromise IAE security.
- dd. The Common Services Contractor shall supplement the Government-provided architecture with technical standards by which IAE developers (i.e., Common Services developers, core application developers, or 3rd party development teams) will use the common services platform.
- ee. The Common Services Contractor shall provide Software Development Kits (SDKs) and other technical documentation (both static web pages as well as traditional documentation) for users of the common services platform. The Government will employ user experience evaluation of the documentation and sites to ensure that it is providing value to users.
- ff. The Common Services Contractor shall be responsible for providing the tooling that supports the management of Agile development; that supports the supply chain from development to

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deployment (including automated testing of all types - user testing, system testing, performance testing, integration testing); and management of infrastructure in support of containerization.

The following provides the specific Common Services requirements.

COMMON SERVICES REQUIREMENTS

At a minimum, the Common Services Contractor shall provide the following Common Shared Services.

- a. Common Components
- b. Common Database and Data Store
- c. API Management
- d. Identity and Access Management
- e. Search Capabilities
- f. Reports and Data Visualization
- g. Hosting
- h. Migration and Evolving the Architecture

The Common Shared Services/Functions shall be utilized by the current IAE systems listed in Attachment FF of Section J, new systems, “containers”, e.g. a production container, a beta testing container, a system testing container, and others, see Section J, Attachment CC for Container Objectives. The containers that are provided by the Common Services Contractor shall meet the appropriate security constraints, such as FISMA level certification, as identified by GSA per business requirements. The Common Services Contractor shall provide implementable and usable functionality in an iterative, constantly improving manner down to the “node” level.

The Common Services Contractor shall consider, and provide the Government with, cost and usage of the products and services to the granularity that would allow for cost recovery by mapping business operations to tool usage. Ideally, for example, in conjunction with the Post-award Core (part of the 3-Cores with APIs strategy), it should be feasible for the Government to calculate a cost per Contract Action Report to charge back to agencies. The IAE Program, through the use of this granular usage information, may provide the Common Services Platform to other programs for their own systems; the IAE program would recoup costs through usage information. The ability to calculate granular-level costs shall be included in the implementation of the common services platform. The Common Services Contractor shall work with the Government to implement instrumentation and costing into the common services platform. See Section J, Attachment BB for notional, high-level product roadmap for the IAE common services program.

COMMON COMPONENTS

The Common Services Contractor shall provide Common Components which:

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- a. Provide an overall application framework that unifies the Common Services functional components and can be used by application development teams from the Common Services Contractor, other Government or contractor development teams and third-party, independent developers to implement the complete IAE functional scope.
- b. Provide a "Landing Page" that will serve as an end-user facing web page for the Integrated Award Environment (IAE) to access all the core business specific applications within the environment. This web page will provide a framework where the core business specific digital products (e.g., new Wage Determination Online application) will be integrated into a single User Interface to provide an unified experience for the end-user. Once fully implemented, the Landing Page will continue to go through enhancements as part of Operations and Maintenance (O&M).
- c. Provide Single-Sign-On that authenticates the logged in user, provides best practices in terms of the technology, tools, and standards for the landing page and the functions within the landing page used by the core application team. The contract shall create visual and interactive design, style sheet, and implement the landing page that emphasizes on customer-centric experience.
- d. The team shall leverage the user personas, user feedback, requirements, wireframe to perform content analysis, design, and implement the Landing Page. The team shall implement a web analytics solution to monitor the performance of user experience. The information from the web analytics will be used to determine future enhancements to the landing page.
- e. Provide a common dashboard, driven by application and environment instrumentation, that allows development teams, Product Owners, PMO staff members and others real-time access to information related to the operation and use of the IAE systems to allow them to manage the IAE environment, evaluate the use of specific features of the application and improve the overall user experience. The dashboard will include the entire breadth of the system including security monitoring, cost and performance monitoring.
- f. Provide an email service that allows Common Services components and other components of IAE to communicate (send) with users of IAE.
- g. Provide a business rules engine that will support the management of business rules both for shared functionality supported by the Common Services but any core functionality as well.
- h. All high-level business objects shall have unique URLs that are usable by any user (although the data that is actually visible will always follow the data visibility and security rules) to ease the communication between users through email, messages and other mediums. The URL should not communicate any information about the object in cases where knowledge concerning the existence of the object is restricted by security or data visibility rules. Consideration of approaches such as Hypermedia as the Engine of Application State (HATEOAS) with the data and API framework is necessary.
- i. Ensures that all web pages shall contain semantic data (e.g. following standards such as Open Graph and those described at schema.org, to allow the intelligent analysis of page content by search engines).
- j. Ensures that all pages shall be findable by public search engines such as Google and Yahoo to allow these services to provide search results for all high-level IAE business objects without the use of IAE Search.
- k. Provide the capability to view the historic activity and current status of one of more services or service components is viewed in the dashboard.

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COMMON DATABASE AND DATA STORE

The Common Services Contractor shall provide Common Database and Data Store Services to other functional components of IAE and to external consumers of data within the overall service framework. “Data stores” in this context would be data management capabilities for transactional stores for applications and a “Data warehouse” is a report-oriented, post-processed data base and software that supports all IAE data. The Common Services Contractor shall:

- a. Provide for secure transmission of data between the data storage service and clients (both other functional components of IAE and external consumers of data) and between sub-components of the data store as well as for the option of encrypting Data at Rest whenever required by GSA policy.
- b. Provide for secure transmission of data between the data storage and clients (both other components of IAE and external consumers of data) and between sub-components of the data storage service.
- c. Provide instrumentation and integration with a common dashboard to support management of the data stores.
- d. Provide instrumentation to support cost recovery and tracking based on usage.
- e. Implement both databases and data stores in a manner that abstracts the physical implementation, including dependence on particular vendor implementations of standards such as SQL or LDAP, and in a modular fashion to allow the future substitution and re-implementation using technical alternatives in support of a possible future centralized GSA technology platform.
- f. Support the efficient, secure, reliable storage and retrieval by functional components of IAE and external consumers of both structured (e.g. SQL, LDAP) and unstructured data (e.g. files, NoSQL) with support where appropriate for Atomicity, Consistency, Isolation, and Durability (ACID) and eventual consistency models. In this context, efficient means the optimal balance of cost, retrieval speed, update speed, amount of storage required and data integrity to meet the operational service level agreements for IAE.
- g. Support encryption-at-rest of data, regardless of its format.
- h. Provide storage and access to data for functional components of IAE and to external consumers of data for specific classes of data that are part of the scope of Common Services including data to support reporting, dashboards and visualizations (‘post operational data’); search indexes; and directory information (LDAP).
- i. Provide storage and access to data for other functional components of IAE and to external consumers of data for specific classes of data including transactional and geospatial data.
- j. Provide access to external databases for other functional components of IAE and for external consumers of data within the overall service framework of IAE.
- k. Provide the ability to store offline infrequently accessed data preserved to support archiving, disaster recovery, audit, data mining and other functions
- l. Provide supporting documentation, including design patterns, usage examples and limitations, to allow developers of other components of IAE to effectively use the data store and its published services.
- m. At a minimum, support the following high-level use cases:

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1. A client may update information in the data store with proper authorization
2. A client may query for information within the data store with proper authorization
3. Bulk load of initial data to support environment creation or migration

API MANAGEMENT SERVICES

The Common Services Contractor shall provide Common API Management Services which shall:

- a. Provide and manage API Management Services as a service to other functional components of IAE and to external consumers within the overall service framework of IAE.
- b. Provide for the secure transmission of data between the API management services and clients (both other functional components of IAE and external consumers of data) and between sub-components with the API Management Services.
- c. Provide for reliable API services that are capable of supporting overall IAE SLA objectives. Provide instrumentation and integration with a common dashboard to support operation of the API Management Services and individual APIs.
- d. Provide instrumentation and integration with a common dashboard to support cost recovery and tracking based on usage of individual APIs.
- e. Provide instrumentation and integration with a common dashboard to support auditing of API usage.
- f. Within the common dashboard API Management Services at a minimum provide the following information: measures of usage by number of API calls by geographic region, calling domain, and by user over granular time periods; measures of usage by time taken by API calls by region, calling domain, and by user over granular time periods.
- g. Provide an environment that supports the publication and operation of a service-based implementation of all IAE components.
- h. Provide access for Common Services Operational staff to implement Government defined policies on controlled and managed access to individual APIs including - requiring identification and optional authentication including the use of API keys; source IP and protocol controls; rate-limited and time-windowed access; and other access management techniques deemed appropriate. Allow these controls to be defined for an individual Client, globally for all Clients of a Service, or for all Services.
- i. Support API implementations including SOAP, REST, RESTful, bulk download methods such as S/FTP, HTML and other protocols as the need is identified and approved by the Government, by other components of Common Services, other components of IAE and third party consumers of IAE services (Clients). Where the protocol supports discovery and other value added features, provide these features.
- j. Provide a secure mechanism that allows release management staff to manage the publication and deprecation of APIs.
- k. Provide a secure website or similar mechanism to allow users of IAE Services, Common Services operational staff and Government oversight teams to request, review, approve, issue, audit, renew, revoke and otherwise manage API keys, user accounts and access policies as required. Use the standard IAE IAM capabilities to manage accounts and associate API keys with these accounts.

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- l. Provide capabilities that provide value added services to the Clients making API request. These capabilities include a business rules engine (to provide syntactic and semantic checking), general transformation and translation capabilities, port translation and protocol translation
- m. Provide support for synchronous and asynchronous APIs including queues.
- n. Provide supporting documentation, including design patterns, usage examples and limitations, to allow developers of other components of IAE to effectively use the API Management Services.
- o. Provide a framework for documentation and technical environment (a web site or similar) to allow search and review of individual APIs by development teams.
- p. At a minimum, support the following use cases:
 1. An API is published, republished, deprecated or decommissioned
 2. An API call is made and responded to from a Common Services component, other IAE component or external system.

IAM (IDENTITY AND ACCESS MANAGEMENT)

The Common Services Contractor shall provide the IAM for the Common Services Platform which shall:

- a. Provide and manage IAM as a service for other functional components of IAE and to Government and non-Government users within the overall service framework of IAE ensuring secure and audited access to IAE resources and services.
- b. Provide secure transmission of data between IAM and clients (both other components of IAE and external users) and between sub-components with the IAM.
- c. Provide reliable IAM services that are capable of supporting overall IAE SLA objectives for IAE and specific objectives for individual users of the service. SLA objectives to be provided by the Government Operational Control and Oversight team.
- d. Provide instrumentation and integration with a common dashboard to support operation of IAM.
- e. Provide instrumentation and integration with a common dashboard to support cost recovery and tracking based on usage of IAM.
- f. Provide instrumentation and integration with a common dashboard to support auditing of IAM usage.
- g. Perform periodic audits of service users and active accounts to verify access levels.
- h. Provide periodic identity management performance reports.
- i. Provide the capability for user facing components of IAE to identify unauthenticated users (both users who do not have an account and users who have an account but are not logged in) to provide consistent experience across all IAE components.
- j. Provide a single-sign on for users of IAE and systems, including other components of IAE, when accessing IAE resources including web pages, reports and APIs
- k. Support OAuth as a method for implementing authentication into APIs and other web services.
- l. Extend the IAE single-sign on capabilities to allow current IAE applications and external systems to integrate current system user accounts into the IAE single-sign on capability.

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- m. Provide to users of IAE systems, and as a service to other functional components of IAE, identity management functions that allow for the full lifecycle management of a user or system identity, roles and role hierarchies by Government and, where appropriate, other global or local administrators. Provide the capability to associate roles with unauthenticated users.
- n. Provide the capability to Government and, where appropriate, other global and local administrators, to manage passwords policies, multi-factor authentication policies, token expiration and other similar features for individual users, roles and across the system as a whole.
- o. Provide to users of IAE systems, and as a service to other components of IAE, access management functions including supplementing the basic username and password login process with policy and role-based requirements to use multi-factor authentication using PIV cards, CAC cards, GSA's Single Sign-on solution, or other common protocols.
- p. Manage system-to-system authentication through a PKI, perhaps leveraging the Federal PKI Bridge.
- q. At a minimum, support the following use cases:
 - 1. A user or system authenticates to gain access to IAE resources.
 - 2. A user or administrator manages an identity or role.

SEARCH SERVICES

The Common Search Services for the Common Service Platform shall:

- a. Provide and manage search capabilities as a service (the "search service") to other functional components of IAE and to external consumers within the overall service framework of IAE.
- b. Provide a scalable service that meets the overall IAE SLA objectives and provisions capacity efficiently to meet the demand profiles, demand projections and sizing information provided in Section J, Attachment HH. In this context efficient means minimizing cost and the use of resources through technologies such as load based "auto-scaling", "dehydration" and advanced purchase of resources ("reserved instances") as well as general automation that limits the amount of repetitive administration work required. Search SLAs will be provided by the Government Operational and Oversight team.
- c. Provide for secure transmission of data between the search service and clients (both other components of IAE and external consumers of data) and between sub-components of the search service.
- d. Provide instrumentation and integration with a common dashboard to support management of the search service.
- e. Provide instrumentation to support cost recovery and tracking based on usage.
- f. Implement the search service in a manner that abstracts the physical implementation and in a modular fashion to allow the future substitution and re-implementation using alternative technologies in support of a possible future centralized GSA technology platform.
- g. Import or create and maintain search indexes that a user or system may query covering Common Services data, data coming from the 3-Core with APIs, current IAE systems and other data sources that IAE uses as reference data, and all current IAE systems referenced in **Section J, Attachment FF**.

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- h. Provide a search web interface where any user may submit a text string to search for and receive an ordered list of results which match the submission, within the specified overall IAE SLA objectives for required response time, to identify one or more objects to work on. For example, A user can search for text, address, date range, codes, contract numbers, or agency. The search system will allow any user to filter or refine the results, by criteria that they specify, by a domain or on one or more search elements defined in the same search index.
- i. Calculate relevance of the result set including; timeliness, authority, related terms and other rules and present relevancy in such a way that the user can evaluate and refine their results.
- j. Provide an advanced search mechanism that presents the user with field based options to initiate a search. For example, user may search for domain, file name, text, address, date range, codes, contract numbers, or agency. Any user may use Boolean operators to expand or restrict the search terms.
- k. Allow, when pre-configured for a search domain in support of a particular business rule, the presentation of search results in a random order to provide some equality of visibility where there are likely multiple matches to a search result.
- l. Provide search results for both structured and unstructured data and highlight or otherwise strongly identify the most recent version of a document in search results.
- m. Provide a system-level interface using REST, RESTful or other API standards that allow other Common Services components, other functional components of IAE or third-party systems to provide alternative user interfaces that allow users of the alternative user interface to submit search requests, receive results and refine searches that are at least as capable as the user submitted requests described above.
- n. Allow system administrators, to ensure proper data quality, performance, and security to configure domain entity types, data domains, and domain indexes on the data stored in IAE databases using a user interface.
- o. As part of overall data security, use the identity of the user requesting a search to limit search criteria, search results and search result metadata based on the ownership of individual entities, visibility of individual attributes of an entity and visibility of an entire class of entities (domain) or a combination of these rules. Where the user requesting the search is unknown, provide search criteria, search results and search result metadata that is equivalent to “public” access.
- p. At a minimum, support the following use cases:
 - The user or system submits a search result, views it and possibly refines the search results.

REPORTS AND DATA VISUALIZATION

The Reports and Data Visualization Services for the Common Service Platform shall:

- a. Provide and manage a Reporting and Data Visualization capability as a service to other functional components of IAE and to external consumers within the overall service framework of IAE.

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- b. Provide for secure transmission of data between the reporting and data visualization service and clients (both other components of IAE and external consumers of data) and between sub-components within the Reporting and Data Visualization service
- c. Provide for reliable Reporting and Data Visualization functions that are capable of supporting the overall SLA objectives for IAE.
- d. Provide instrumentation and integration with a common dashboard to support operation of the Reporting and Data Visualization capabilities.
- e. Provide instrumentation and integration with a common dashboard to support cost recovery and tracking based on usage individual reports and visualizations.
- f. Provide instrumentation and integration with a common dashboard to support auditing of reports and visualization usage.
- g. Provide and manage a secure reporting and data visualization capabilities for operational and post-operational databases, perhaps based on data warehousing technology, and implemented within the framework of the Common Services Data Stores to support the operation of the IAE PMO (accessible to authenticated PMO staff) and also accessible by all users of IAE systems.
- h. Provide the capability for authorized PMO users to create and run ad-hoc queries, reports and visualizations based on any pre-defined data sets.
- i. At a minimum, support the following use cases:
 - 1. A user requests a report or visualization
 - 2. A user creates an ad hoc query, report or visualization

HOSTING

Hosting Services for the Common Service Platform shall:

- a. Provide and manage an extensible, demand driven hosting environment including all IaaS, PaaS and SaaS components, infrastructure, software, networking, Content Delivery Network (CDN), storage, hypervisors, co-location and other tangibles as required by the proposed solution to operate both the Common Services functional scope and the broader IAE functional scope.
- b. Provide a self monitoring and self healing capability. The solution should track the configured state of PaaS internal components as well as applications and services. This should periodically be compared with the actual run-time state of the system. The solution should be able to rectify discrepancies and restore the desired state with minimal operator intervention.
- c. Provide support for the Consolidated Deployment Model (Containers and nodes) as described in Attachment S of Section J. to allow Common Services operations team, DevOps, Development teams and others as authorized to deploy and teardown environments as needed in the support of development, testing and production activities.
- d. Provide a platform to allow the secure and public distribution of all code, automated tests, infrastructure configurations, scripts and other artifacts that form the IAE functional scope to allow Common Services teams, Government and other contractor teams or third parties to create and manage the IAE code base (the “Common Code Repository”).

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- e. Provide a scalable service that meets overall IAE SLA objectives and provisions capacity efficiently to meet demand profiles, demand projections and sizing information provided in Section J, Attachment HH and gracefully degrading service where constraints such as spending limits prevent fully responding to demand. In this context efficient means minimizing cost and the use of resources through technologies such as load based “auto-scaling”, “dehydration”, advanced purchase of resources (“reserved instances”) and actively managing provisioned Input/Output Operations per Second (IOPS) as well as general automation that limits the amount of repetitive administration work required.
- f. Provide contractor neutral tools to allow an independent IV&V and DevOps team to manage a continuous integration process that stages, tests and reports on the readiness for deployment of infrastructure, configuration, code and other “soft” elements of the environment.
- g. Provide a platform that support a controlled, efficient pipeline of stand-up, tear-down, production deployment; this includes an environment that supports the promotion of code stored in an internal codebase that is promoted to a public codebase, and deployment of code from the repository to the appropriate environment. The contractors shall provide a platform that supports automated testing. For example, the platform should facilitate the generation of sanitized test data sets and minimizes the need to replicate full environments to support localized testing by developers.
- h. Provide a platform for automated and manual fault injection to support the development of a robust production environment.
- i. Support generic compute nodes on which software may be deployed.
- j. Support machine-readable and human-constructible node definitions.
- k. Provide a solution without license restrictions that would prevent Common Services development teams, other contractor and Government development teams and third parties from freely creating and tearing-down production-like, staging, development, test and other environments both hosted on the Common Services environment and on similarly designed third-party environments.
- l. Provide an environment that supports both FISMA Moderate and Low deployments
- m. Utilize FedRAMP certification as the primary mechanism for assurance of infrastructure components of the overall environment.
- n. Support PCI DSS level 1.
- o. Provide notifications of security related incidents and provide functionality to initiate incident response.
- p. Provide a dual stack implementation that supports both IPv4 and IPv6 networking.
- q. Support DNSSEC for domain name resolution if DNS is included as a component of the Common Services platform.
- r. At a minimum, support the following use cases:
 - 1. The Deployment Manager Service is used to coordinate the creation, deployment, update and tearing down of a collection of nodes that make up an environment (such as Test or Staging). It is used to manage the configuration of one or more Nodes (that can be used to create active Node instances).
 - 2. The Deployment Manager Service is used to manage the configuration of one or more Nodes (that can be used to create active Node instances).

SECTION C –PERFORMANCE-BASED STATEMENT OF WORK

MIGRATION AND EVOLVING THE ARCHITECTURE

- a. Provide migration support. Migration is a transition activity that allows the transfer of current system data and components to the new Common Service Platform. The Common Services Contractor shall:
 1. Support the transition of Core Application functionality (See Section J, Attachment FF). The functionality will be extracted/developed by a separate contractor and provided to the Common Services contractor for implementation to the Common Service Platform.
 2. Support the migration of production data to the new Common Services platform, including test migrations, Quality Assurance (QA) and final verification prior to the final production migration.
 3. Migrate IAE data from Government provided data extracts or other means, as defined by the Government.
 4. Support the migration of the existing code to the new environment (the responsibility will be on the transition teams within the existing contracts to ensure that the code moves as necessary).
 5. Support the migration of subcomponents of existing capability into the common services (e.g., transitioning FBO.gov's search capability into the common services).
- b. Evolve the common services platform over time. The evolution should leverage newer technologies in order to improve the provision of business functionality for IAE's stakeholders, reduce operational costs, increase security, and reduce development costs for implementation of the 3-Cores with APIs. The evolution will be guided through the architecture by the Government and coordinated with the implementation of the 3-Cores with APIs. The contractor shall provide white papers for evolution as they identify areas of improvement proactively. When requested by the Government, the contractor should research tools and update configurations, present prototypes if requested, and present them to Government for evaluation.
- c. Meet the changing needs of the acquisition environment. This may mean that new or updated products will be required; products may be retired or replaced by GFE; or that new product scope may be added if necessary.

C.6.5 TASK 5: DEVELOPMENT AND OPERATIONS SUPPORT

The Common Services contractor shall provide continuing Operations Support. The Common Services Contractor shall work with Government technical lead and other development groups as required to evolve the IAE architecture to support specific functional requirements. The Common Services development teams shall retain ownership and responsibility for the effectiveness of the operation of the Common Services code in production. The Common Services Contractor shall participate with the Government to provide guidance on new/changed service definitions, service level targets, hours of operation, and support levels.

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C.6.5.1 SUBTASK 1: OPERATIONS SUPPORT SERVICES

The Common Services Contractor shall provide operational support for the IAE environment. This includes providing support for Hosting Operations, Data Operations, and API Operations. Operations Support provides day-to-day frontline support for production and other environments, such as the near-production, test, and minimal environments. The following subsections describe the specific requirements for Hosting, Data, and API operations.

The Common Services Contractor shall:

- a. Support the re-hosting of the current IAE systems onto the common services platform. This can include taking an existing code base, configuration, and data set into the common services platform. The existing contractor would still be responsible for migrating and operating that system, but they would be using the common services platform for hosting.
- b. Support the migration of subsets of existing system components into the common services environment. This may include, for example, supporting the transition of the search components of an existing IAE-system to use the tools and environment provided by the common services platform.
- c. Support independent validation and verification activities as requested by the Government.
- d. Monitor production use of the application to understand user and application behavior for the purposes of improving the application and determining the effectiveness of prior changes. The primary mechanism envisioned to support this activity is the instrumentation and dashboard provided under the Hosting and Operational Support activity. The contractor may suggest other mechanisms.
- e. Provide occasional, non-production critical Tier 2 technical support for end-user issues.
- f. Maintain knowledge management system to share user behaviors, required levels of expertise to maintain the service, known errors and workarounds, etc.
- g. Participate as required in production-critical incident response including conference calls related to coordinating response to on-going security and production-related (availability) incidents.

C.6.5.2 SUBTASK 2: HOSTING OPERATIONS

At a minimum, the Common Services Contractor shall:

- a. Develop and maintain standard procedures for daily operations.
- b. Proactively manage individual components of environment to ensure availability and security. Complete standard operational activities including patching, backup and restore, log maintenance, checks that actual configurations match expected configuration etc.
- c. Maintain service level targets established by the Government for Functional Containers and provide real-time and periodic reporting on performance.
- d. Maintain service continuity based on established parameters and report performance against established targets.
- e. As required, create and tear down environments including production, demo, dev, test, load-test, penetration, integration, beta and UAT environments.

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- f. Maintain a continuous integration pipeline that is usable by the Government and its other support contractors to assure the quality of deployments throughout each container.
- g. Provide a Common Code Repository (GitHub/git/Apache Subversion (SVN) etc) and manage users and security for the repository.
- h. The Government will be using GitHub as the public repository for the IAE source code base and reserves the right to transition at a later date if necessary.
- i. Support the DevOps and development teams in the effective use of the repository for managing the code base.
- j. Utilize a Configuration Management Database to track system components for GFE and contractor owned components.
- k. Monitor service requests and provide support through closure.
- l. Provide request fulfillment performance reports to determine timeliness and effectiveness
- m. Manage access control for users of the components of the operating environment.
- n. Coordinate problem resolution including API, IAM and other non-Common Services functions.
- o. Provide real-time production environment reporting to development teams and others to provide insight to the effective usage of the functionality.
- p. Provide feedback to the development team on the impact and effectiveness of service changes.
- q. Provide event monitoring and provide appropriate operational support.
- r. Provide event management performance reporting to determine effectiveness on an ongoing basis provide automated and manual fault injection to support the development of a robust hosting environment.
- s. Evaluate operational performance and provide process improvement recommendations.
- t. Implement approved improvement recommendations and monitor service impact.
- u. Support the Information System Security Officer (ISSO) in the production of the System Security Plan (SSP) and maintenance of the Authority to Operate (ATO) including support for Continuous Monitoring and maintenance of security posture.
- v. Provide internal and external automated security scanning (virus scanning as well as Open Web Application Security Project (OWASP) tools).
- w. Coordinate incident response including in-incident discussions and actions and post-incident root cause analysis and planning.
- x. Generate periodic reports to support cost recovery and map costs to business functions.
- y. Generate periodic reports tracking environment costs related to development and test.
- z. Provide cost/risk trade off information to the Government to allow effective cost management such as the trade-off between base capacity/auto scaling or many small/few large Virtual Machines (VMs). Cost/risk recommendations must be consistent with the availability requirements of the Container.
- aa. Analyze and provide periodic reports on IAE infrastructure wide cost drivers within the environment.
- bb. Monitor customer demand patterns for services and provide real-time and periodic reporting to the Government along with recommendations to adjust capacity or adjust business patterns
- cc. Track capacity performance against established thresholds and report performance to the Government on real-time and periodic basis with recommended adjustments.
- dd. Provide input into the release and sprint planning activity.

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C.6.5.3 SUBTASK 3: DATA OPERATIONS

At a minimum, the Common Services Contractor shall:

- a. Prepare representative subsets of production data to support non-production environments such as test (including load testing), beta and demo.
- b. Data cleansing activities within the production environment as directed by the Government teams.
 1. In support of migration of data into the IAE environment.
 2. Fixing bad data caused by defects.
 3. Adjusting data due to functional changes that cannot be changed through any user interface.
- c. Maintain a data discovery page (including data dictionaries and other metadata) and manage links from data.gov (a web page that is part of the Common Components).
- d. Provide data quality measurement for data owners, data stewards and other parties to evaluate quality concerns
 1. The data quality capability should link business rules definitions to operational data
 2. The data quality reporting should be available both internally and externally
- e. Support modification of data records - such as the addition of a new field - to the data store (modification of the Data Definition Language (DDL) or equivalent for non-SQL data stores is not included in this activity but is covered by Development Activities above)
- f. Execute automated and manual Extract Transform Load (ETL) jobs within the environment (creation of daily extracts, population of DW from operational data stores, etc.)
- g. Configure reporting capabilities using GSA's reporting tools as well as any reporting tools included in the Common Services architecture.
- h. Configure reporting capabilities for ad hoc requests using GSA's reporting tools as well as any reporting tools included in the Common Services architecture Evaluate data management process effectiveness.

C.6.5.4 SUBTASK 4: API SERVICE OPERATIONS

API Operations refers to the additional externally facing activities required to support the use of APIs, for example issuing new API keys, monitoring usage and facilitating communication (perhaps through a website) between other teams and users of the APIs. Both these activities are described in more detail in later sections of this document. At a minimum, the Common Services Contractor shall:

- a. Support the discovery and use of IAE APIs by maintaining an API discovery web page (including data dictionaries and other metadata) and manage links from data.gov (a web page that is part of the Common Components - model off Mashery/APIary)
- b. Process requests from all users of IAE APIs including Common Services components, Government and other contractors and 3rd party user of an API combining both manual

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authorization steps and self-service website front end in coordination with the Project Management Office (PMO) oversight teams. This will be integrated into the API Operations through IAM.

- c. Leverage api.data.gov as part of the API operations; api.data.gov is a Government-developed open source tool that supports API key management and usage throttling
- d. Apply the API architecture and design principles to ensure that change of the APIs over time is managed and minimizes impact to interfacing systems while still accommodating the evolution of business needs in the award environment.

C.6.TASK 6: OPTIONAL SURGE SUPPORT

Unpredictable Government changes and initiatives frequently affect IAE support. The Common Services Contractor shall provide ad hoc support during any phase of the task order in the eventuality of these events.